UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,998	08/16/2004	Anand Shridhar SAWANT	TI-36864	4997

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EXAMINER
MORRISON, JAY A

ART UNIT	PAPER NUMBER
2168	

NOTIFICATION DATE	DELIVERY MODE
02/11/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/710,998	SAWANT ET AL.
	Examiner	Art Unit	
	Jay A. Morrison	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 June 2007_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-25_ is/are pending in the application.

 4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-25_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

 a)☐ All b)☐ Some * c)☐ None of:

 1.☐ Certified copies of the priority documents have been received.

 2.☐ Certified copies of the priority documents have been received in Application No. _____.

 3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _6/29/07_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Remarks

1.   Claims 1-25 are pending.

Specification

2.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: "machine readable medium" as claimed in the preamble of

claims 11-19 is not defined in the specification.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   As per claims 1-10, these claims appear to conform to 35 USC 101

requirements. The claimed method produces a useful, concrete and tangible result and

seems to establish a practical application according to the specification, paragraphs

[0029]-[0030]. These claims appear to be directed to an appropriate **process** within the

meaning of 35 USC 101.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

1.   Claims 1-4, 11-14 and 20-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Suzuki (Patent Number 6,604,170) in view of Nelson et al. ('Nelson'

hereinafter) ('Caching in the Sprite Network File System", ACM Transactions on

Computer Systems, Vol. 6, No. 1, February 1988, pages 134-154).

As per claim 1, Suzuki teaches

A method of accessing data contained in a first file, wherein said first file is

comprised in a plurality of files stored on a secondary storage, said secondary storage

comprising a plurality of clusters, a file allocation table (FAT) indicating a corresponding

set of clusters allocated to each of said plurality of files, said method comprising: (see

abstract and background)

determining a set of identifiers by examining said FAT, wherein each of said set

of identifiers identifies a corresponding one of said set of clusters allocated to said first

file; (EXT-FAT items, column 6, lines 55-67)

Suzuki does not explicitly indicate "storing said set of identifiers in a random

access memory (RAM); and retrieving at least a portion of said first file from said

secondary storage based on said set of identifiers stored in said RAM, wherein said

determining and said storing are performed when the content of said first file is to be

retrieved from said secondary storage for processing."

However, Nelson discloses "storing said set of identifiers in a random access

memory (RAM);" (caches in main memory, section 4.1, page 137) "and retrieving at

least a portion of said first file from said secondary storage based on said set of

identifiers stored in said RAM, wherein said determining and said storing are performed

when the content of said first file is to be retrieved from said secondary storage for

processing" (cache blocks addressed virtually for location of block, section 4.2, page

137-138).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine Suzuki and Nelson because using the steps of "storing

said set of identifiers in a random access memory (RAM); and retrieving at least a

portion of said first file from said secondary storage based on said set of identifiers

stored in said RAM, wherein said determining and said storing are performed when the

content of said first file is to be retrieved from said secondary storage for processing"

would have given those skilled in the art the tools to improve the invention by reduce the

load on the file system and increase performance. This gives the user the advantage of

faster access to disk resources.

As per claim 2, Suzuki teaches

each of said plurality of clusters is identified by a corresponding one of a plurality

of identifiers, said FAT storing said set of identifiers in the form of a linked list, wherein

an order specified by said linked list indicates the sequence in which said set of clusters

are used to store data contained in said first file, said method comprising: (column 6,

lines 55-67)

traversing said linked list to retrieve said set of identifiers in said order, wherein

said storing stores said set of identifiers in said RAM. (figure 9, column 6, lines 55-67;

column 9, lines 25-32)

As per claim 3, Suzuki teaches

said set of identifiers are stored according to a technique which permits each of

said set of identifiers to be retrieved with fewer instructions than the number of

instructions required to access the same identifier from said FAT in said secondary

storage. (column 12, lines 35-40)

As per claim 4, Suzuki teaches

wherein said set of identifiers are stored in the form of an array which permits

each identifier to be retrieved by a single access. (column 6, lines 60-65)

As per claims 11-14,

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 1-4 and are similarly rejected.

As per claims 20-23,

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 1-4 and are similarly rejected.

6.   Claims 5-6,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Suzuki (Patent Number 6,604,170) in view of Nelson et al. ('Nelson' hereinafter)

('Caching in the Sprite Network File System", ACM Transactions on Computer Systems,

Vol. 6, No. 1, February 1988, pages 134-154) and further in view of Wong et al. ('Wong'

hereinafter) (Patent Number 5,890,169).

As per claim 5,

Neither Suzuki nor Nelson explicitly indicate "receiving a start offset of data to be

accessed; computing a cluster index by dividing said start offset by a number of bytes in

each of said plurality of clusters; and accessing said array using said cluster index to

determine a specific one of said set of identifiers, wherein said data to be accessed is

present in a cluster identified by said specific one of said set of identifiers."

However, Wong discloses "receiving a start offset of data to be accessed;

computing a cluster index by dividing said start offset by a number of bytes in each of

said plurality of clusters; and accessing said array using said cluster index to determine

a specific one of said set of identifiers, wherein said data to be accessed is present in a

cluster identified by said specific one of said set of identifiers" (column 22, line 61

through column 23, line 7).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine Suzuki, Nelson and Wong because using the steps of

"receiving a start offset of data to be accessed; computing a cluster index by dividing

said start offset by a number of bytes in each of said plurality of clusters; and accessing

said array using said cluster index to determine a specific one of said set of identifiers,

wherein said data to be accessed is present in a cluster identified by said specific one of

said set of identifiers" would have given those skilled in the art the tools to improve the

invention by maximizing I/O performance. This gives the user the advantage of better

use of computing resources giving better response times.

As per claim 6, Suzuki teaches

data stored in said first file represents a song. (data on the disk, column 6, lines

30-42; note: a song is nonfunctional descriptive material and are not functionally

involved in the steps recited. Thus, this descriptive material will not distinguish the

claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d

1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32

USPQ2d 1031 (Fed. Cir. 1994).)

As per claim 16,

This claim is rejected on grounds corresponding to the arguments given above

for rejected claim 5 and is similarly rejected.

7.   Claims 7-10,17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Suzuki (Patent Number 6,604,170) in view of Nelson et al. ('Nelson' hereinafter)

('Caching in the Sprite Network File System", ACM Transactions on Computer Systems,

Vol. 6, No. 1, February 1988, pages 134-154) and further in view of Hylands et al.

('Hylands' hereinafter) (Publication Number 2004/0205697)

As per claim 7,

A method of implementing an application in a system containing a small memory,

wherein said system supports a file system on a secondary storage, wherein said

secondary storage comprises a plurality of clusters, wherein said file system comprises

a plurality of files and each of said plurality of files is stored in a corresponding one of a

plurality of sets of clusters, a file allocation table (FAT) indicating a corresponding set of

clusters allocated to each of said plurality of files, said plurality of sets of clusters being

contained in said plurality of clusters, said method comprising: (see abstract and background)

providing a first module which is designed to determine a plurality of identifiers corresponding to a specified file by examining said FAT and store said plurality of identifiers in a random access memory (RAM) according to a convention, wherein said plurality of identifiers specify a set of clusters corresponding to said specified file, said set of clusters being contained in said plurality of sets of clusters; (EXT-FAT items, column 6, lines 55-67)

providing a second module which is to perform an operation on a file of interest, wherein said second module is designed to determine a desired cluster by using said plurality of identifiers stored in said RAM according to said convention; (figure 9, column 6, lines 55-67; column 9, lines 25-32)

Suzuki does not explicitly indicate "executing said first module when the content of said specified file is to be retrieved from said secondary storage for processing, wherein said first module is executed while specifying said file of interest as said specified file such that a said plurality of identifiers corresponding to said file of interest are stored in said RAM according to said convention".

However, Nelson discloses "executing said first module when the content of said specified file is to be retrieved from said secondary storage for processing, wherein said first module is executed while specifying said file of interest as said specified file such that a said plurality of identifiers corresponding to said file of interest are stored in said

RAM according to said convention" (cache blocks addressed virtually for location of block, section 4.2, page 137-138).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki and Nelson because using the steps of "executing said first module when the content of said specified file is to be retrieved from said secondary storage for processing, wherein said first module is executed while specifying said file of interest as said specified file such that a said plurality of identifiers corresponding to said file of interest are stored in said RAM according to said convention" would have given those skilled in the art the tools to improve the invention by reduce the load on the file system and increase performance. This gives the user the advantage of faster access to disk resources.

Neither Suzuki nor Nelson explicitly indicate "and executing said second module after executing said first module, wherein both of said first module and said second module are executed using at least some of the same locations of said small memory."

However, Hylands discloses "and executing said second module after executing said first module, wherein both of said first module and said second module are executed using at least some of the same locations of said small memory" (overlays, paragraph [0020]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki, Nelson and Hylands because using the steps of "and executing said second module after executing said first module, wherein both of said first module and said second module are executed using at least some of the same

locations of said small memory" would have given those skilled in the art the tools to improve the invention by allowing a program with large memory requirements to fit into a small memory footprint. This gives the user the advantage of being able to run larger programs with less memory resources.

As per claim 8,

Neither Suzuki nor Nelson explicitly indicate "said second module is overlaid on the same memory space on which said first module is loaded during execution."

However, Hylands discloses "said second module is overlaid on the same memory space on which said first module is loaded during execution" (paragraph [0020]-[0021])

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki, Nelson and Hylands because using the steps of "said second module is overlaid on the same memory space on which said first module is loaded during execution" would have given those skilled in the art the tools to improve the invention by allowing a program with large memory requirements to fit into a small memory footprint. This gives the user the advantage of being able to run larger programs with less memory resources.

As per claim 9,

Neither Suzuki nor Nelson explicitly indicate "said convention comprises storing said plurality of identifiers at a prespecified portion of said RAM."

However, Hylands discloses "said convention comprises storing said plurality of identifiers at a prespecified portion of said RAM" (target memory, paragraph [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki, Nelson and Hylands because using the steps of "said convention comprises storing said plurality of identifiers at a prespecified portion of said RAM" would have given those skilled in the art the tools to improve the invention by allowing a program with large memory requirements to fit into a small memory footprint. This gives the user the advantage of being able to run larger programs with less memory resources.

As per claim 10, Suzuki teaches

each of said plurality of files stores data representing a corresponding song. (data on the disk, column 6, lines 30-42; note: a song is nonfunctional descriptive material and are not functionally involved in the steps recited. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994).)

As per claims 17-19,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 7-9 and are similarly rejected.

8.   Claims 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Suzuki (Patent Number 6,604,170) in view of Nelson et al. ('Nelson' hereinafter)

('Caching in the Sprite Network File System", ACM Transactions on Computer Systems,

Vol. 6, No. 1, February 1988, pages 134-154) and further in view of Shnelvar (Patent

Number 6,374,266).

        As per claim 15,

        Neither Suzuki nor Nelson explicitly indicate "said array comprises an associative

array."

        However, Shnelvar discloses "said array comprises an associative array"

(column 33, lines 44-60).

        It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine Suzuki, Nelson and Shnelvar because using the steps

of "said array comprises an associative array" would have given those skilled in the art

the tools to improve the invention by ensuring faster access to the data. This gives the

user the advantage of not having to wait as long for data access.

        As per claim 24,

        This claim is rejected on grounds corresponding to the arguments given above

for rejected claim 15 and is similarly rejected.

9.   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki

(Patent Number 6,604,170) in view of Nelson et al. ('Nelson' hereinafter) ('Caching in

the Sprite Network File System", ACM Transactions on Computer Systems, Vol. 6, No.

1, February 1988, pages 134-154) and further in view of Shnelvar (Patent Number

6,374,266) and further in view of Wong et al. ('Wong' hereinafter) (Patent Number

5,890,169).

        As per claim 25,

        Neither Suzuki nor Nelson explicitly indicate "means for receiving a start offset of

data to be accessed; means for computing a cluster index by dividing said start offset by

a number of bytes in each of said plurality of clusters; and means for accessing said

array using said cluster index to determine a specific one of said set of identifiers,

wherein said data to be accessed is present in a cluster identified by said specific one of

said set of identifiers."

        However, Wong discloses "means for receiving a start offset of data to be

accessed; means for computing a cluster index by dividing said start offset by a number

of bytes in each of said plurality of clusters; and means for accessing said array using

said cluster index to determine a specific one of said set of identifiers, wherein said data

to be accessed is present in a cluster identified by said specific one of said set of

identifiers" (column 22, line 61 through column 23, line 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki, Nelson, Shnelvar, and Wong because using the steps of "means for receiving a start offset of data to be accessed; means for computing a cluster index by dividing said start offset by a number of bytes in each of said plurality of clusters; and means for accessing said array using said cluster index to determine a specific one of said set of identifiers, wherein said data to be accessed is present in a cluster identified by said specific one of said set of identifiers" would have given those skilled in the art the tools to improve the invention by maximizing I/O performance. This gives the user the advantage of better use of computing resources giving better response times.

Response to Arguments

10.   Applicant argues that Suzuki's EXT-FAT items are not formed from FAT when the content is to be retrieved from secondary storage. It is respectfully submitted that Nelson cures these deficiencies and the combination of these references teaches the new limitation as claimed.

11.   Regarding Applicant's remaining arguments with respect to claims 1-25, these arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

TIM VO
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